

**AMENDMENTS TO THE CLAIMS**

**1. (Currently amended)** A method for quantitatively analyzing specimen molecules, which method which comprises:

(1) ~~a step to cause flowing of~~ passing a solution containing the specimen molecules and a solution containing fluorescent probe molecules capable of forming a complex with the specimen molecules ~~in through~~ a micro flow channel ~~in such a fashion~~ that a laminar flow is formed;

(2) ~~a step to~~ selectively promote promoting diffusion of the complex formed according to the affinity between the fluorescent probe molecules and the specimen molecules in the laminar flow, and

(3) ~~a step to detect and analyze~~ fluorometrically determining the degree of diffusion of the complex formed between the specimen molecules and the probe molecules within the micro flow channel by detecting signals emitted from the fluorescent probe molecules and comparing the results to a predetermined calibration curve to quantitatively analyze the specimen molecules.

**2. (Currently amended)** The method ~~of analysis described in of~~ Claim 1 ~~in which the~~ aforementioned , wherein the fluorescent probe molecule is a molecule molecules are capable of emitting fluorescence.

**3. (Canceled)**

4. **(Currently amended)** A method for ~~analysis~~ quantitative determination of a DNA fragment, which method comprises:

(1) ~~a step to cause flowing of passing~~ a solution containing a DNA fragment of a specified sequence as a specimen molecule and a solution containing a fluorescent probe molecule capable of forming a complex with the specimen molecule ~~in~~ through a micro flow channel ~~in such a fashion~~ that a laminar flow is formed;

(2) ~~a step to~~ selectively ~~promote~~ promoting diffusion of the complex formed according to affinity between the fluorescent probe molecule and the specimen molecule in the laminar flow; and

(3) ~~a step to detect and analyze~~ detecting changes in the degree of diffusion of the complex formed between the specimen molecule and the fluorescent probe molecule within the microflow channel by detecting signals emitted from the fluorescent probe molecule and comparing the results to a predetermined calibration curve to fluorometrically determining the content of the specimen molecules.